

CLAIMS:

1. A backlight including a light guide wherein light from one or more light sources is constrained by total internal reflection and from which light may be output to provide backlighting for a display screen, and a light reservoir for feeding said light guide with light,
5 the light guide having a substantially planar construction and including an output surface from which light may be output and an opposing input surface disposed to receive said light,
said input surface including incoupling means rising therefrom and extending into the light reservoir, the incoupling means having at least three mutually non-coplanar
10 sidewall sections extending transversely from said input surface, each sidewall section covering a different part of the input surface, the light reservoir being arranged such that light passing through one area of the light reservoir is capable of entering the light guide through each of said sidewall sections.
- 15 2. A backlight according to claim 1, further including intermediate reflective means disposed in spaces between said sidewall sections and configured to reflect light impinging thereon from said light reservoir away from parts of the input surface in said spaces.
- 20 3. A backlight according to claim 2, wherein surfaces of said intermediate reflective means which face away from the light guide are rendered diffusely reflective to light.
4. A backlight according to claim 2 or 3, wherein surfaces of said intermediate
25 reflective means which face the light guide are rendered light absorbent.
5. A backlight according to claim 2, 3 or 4, wherein a gas is provided between the intermediate reflective means and those regions of the input surface of the light guide which it overlies.

6. A backlight according to any preceding claim, wherein the incoupling means further include endwall sections spanning the respective sidewall sections, said endwall sections being provided with reflective means configured to reflect light impinging thereon from said light reservoir away from the endwall sections.

7. A backlight according to claim 6, wherein surfaces of said endwall reflective means that face away from the light guide are rendered diffusely reflective to light.

8. A backlight according to claim 6 or 7, wherein surfaces of said endwall reflective means which face the light guide are rendered light absorbent.

9. A backlight according to any preceding claim, wherein said one or more light sources are located in said light reservoir.

10. A backlight according to any preceding claim, wherein said one or more light sources are spaced remote from said incoupling means in a direction away from the plane of the light guide.

11. A backlight according to claim 10, wherein the pattern in which the light sources are arranged in a direction parallel to the plane of the light guide does not correspond as regards pitch with the pattern in which the incoupling elements are arranged in the same direction.

12. A backlight according to claim 11, wherein the incoupling means comprise a plurality of incoupling elements arranged over the input surface.

13. A backlight according to claim 12, wherein said incoupling elements comprise a plurality of elongate ridge-like members transversely spaced in one direction across the input surface of the light guide.

14. A backlight according to claim 13, wherein the ridge-like members are substantially rectangular in cross-section, having substantially flat endwalls and upright sidewalls that are substantially orthogonal to the plane of the light guide.

15. A backlight according to claim 12, wherein the incoupling elements comprise a plurality of members spaced in two orthogonal directions across the input surface of the light guide.

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16. A backlight according to any of claims 12 to 15, wherein the height of each said incoupling element, measured perpendicular to the plane of the light guide, is at least as great as a width thereof measured parallel to the plane of the light guide.

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17. A backlight according to any preceding claim, wherein the one or more light sources comprise one or more tubular fluorescent lamps disposed with their axes substantially parallel to said input and output surfaces of the light guide.

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18. A backlight according to claim 17, as dependent on claim 13 or claim 14, wherein the axis or axes of said one or more lamps are disposed parallel to said ridges.

19. A backlight according to any of claims 1 to 16, wherein the one or more light sources comprise one or more light emitting diodes.

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20. A backlight according to any preceding claim, wherein a mixture of various types of light sources is used.

21. A backlight according to any preceding claim, wherein the light reservoir is formed in a light box with white diffusely reflective inner surfaces.

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22. A display for image display, including a backlight according to any preceding claim.

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23. A display according to claim 22, the display comprising a screen configured to display images; the display screen comprising a mobile element disposed adjacent to said backlight, and means utilizing dynamic voltage waveforms for locally attracting said mobile element into contact with the output surface of the backlight at positions where, depending on the picture content to be displayed, light is to be emitted from the display.